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ABSTRACT

A working definition of critical thinking is needed to guide teachers to encourage their students to think critically and to coach them as they proceed. Constructing a working definition involves first identifying certain assumptions that, when taken collectively, may be incompatible with an effective definition of critical thinking. Among these misconceptions are: (1) teaching for thinking is equivalent to teaching for critical thinking; (2) reflective teachers produce reflective learners, and therefore, students will think critically if teachers teach what they know in a critical way; (3) teaching about critical thinking is an effective way to teach for critical thinking; (4) teaching for critical thinking involves drilling for thinking skills; (5) teaching for logical thinking is equivalent to teaching for critical thinking; and (6) teaching for learning is just as good as teaching for critical thinking. Critical thinking is a way of making education relevant. It can be conceived of as thinking that is reliant upon criteria, self-correcting, sensitive to context, and conducive to judgment. These features can be operationalized when the classroom is converted to a community of inquiry. (IAH)

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Montclair State College
Upper Montclair, NJ 07043

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Matthew Lipman

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Montclair State College
Institute for Critical Thinking

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The Institute for Critical Thinking at Montclair State College is designed to support and enrich faculty development efforts toward critical thinking as an educational goal. Guided by a National Advisory Board and a College Advisory Council, its primary purpose is to serve as a catalyst in the development of educational excellence across the curriculum at the College. A collaborative, multi-disciplinary approach is in process, with attention to the study of both the theoretical aspects of critical thinking across the disciplines and their implications for teaching and learning at the college level. Leadership roles have also been assumed in helping other colleges and schools to incorporate critical thinking into their curricula.

As part of this effort, the Institute for Critical Thinking publishes a newsletter, *Critical Thinking: Inquiry Across the Disciplines*, on a monthly basis during the academic year. The newsletter publishes information about the activities of the Institute, as well as brief analyses of various critical thinking issues. In addition, the publication of several series of resource documents are in process. These publications will make available, to interested faculty and others at Montclair and elsewhere, working papers related to critical thinking as an educational goal. These publications will enable those persons interested in critical thinking to have access to more extensive discussions of the kinds of issues that can only be presented in summary form in the newsletter. These discussions will typically be regarded as works-in-progress--articles written as tentative arguments inviting response from others, articles awaiting the long publication delay in journals, etc. The proceedings of our conferences will also be presented in the form of resource publications, as will articles based on our series of lectures, inquiry panels, and faculty seminars and forums.

In this second series of resource publications, we have again included working papers by members and guests of our Institute Fellows "Round Table." Most of these working papers have been presented for discussion at one or more of the Fellows' seminar meetings, and have influenced our thinking about the nature of critical thinking as an educational goal. We have also included papers dealing with practical applications of the Institute's work and of related projects in other settings.

The Institute welcomes suggestions for our resource publication series, as well as for our other activities. Correspondence may be addressed to us at

Institute for Critical Thinking
Montclair State College
Upper Montclair, NJ 07043

Editors: ***Wendy Oxman-Michelli, Director***
Mark Weinstein, Associate Director

Misconceptions in Teaching for Critical Thinking

Matthew Lipman

Faced with an epidemic of some unusual ailment, investigators will often begin by trying to establish the *criteria* by means of which they can distinguish cases of illness from non-cases. In effect, they begin with a working *definition* that is subject to modification.

Now, critical thinking is not a disease; it is, rather, a wholesome educational development. But it does have its perplexing aspects. As with the new form of illness, therefore, we may need a set of criteria by which critical thinking can be identified--a working definition that can guide teachers to encourage their students to think critically, and to coach them as they do.

But that is not all. Additionally needed is a careful examination of the *assumptions* we are likely to make about teaching and thinking and skills and content and standards. This is because the most effective way to convert a working definition into a non-working definition is to begin with assumptions that are incompatible with the definition.

I shall have a bit more to say later on about this matter of defining critical thinking. For now, let's consider some assumptions, keeping in mind that these may not be unsound by themselves, but may be ineffectual when taken collectively.

Misconception #1. Teaching for thinking is equivalent to teaching for critical thinking.

If these two things were the same, then those who teach for thinking would be right in the reply, "Teach for critical thinking? Why, we're already doing it!" But are they? And if not, why not?

Let's invent the case of Mr. A. As a teacher, Mr. A. is alert, forceful and energetic. His mind is constantly on his subject and constantly awhirl with thoughts. He wants his pupils to think about the subject as he does, with the same interest and care and excitement as he feels in himself. Consequently he refrains from lecturing. Instead, he shoots questions, in rapid fire, at his students, because he knows that questions will make them think. Likewise, his homework assignments challenge the students to reflect. If asked about the intellectual behavior of his students, he will say that they tend to be thoughtless and indolent; they need to have their attention galvanized by a dramatic teacher who compels them to think more and more about the issues at hand, rather than drift into aimless but pleasant reveries.

Comment: Perhaps Mr. A. wants to increase the quantity of his students' thinking, and assumes that he will thereby improve its

quality. Perhaps he assumes that it is unrealistic to expect students to think *better*: one can only try to get them to think *more*. And to some extent, of course, he's right-- more thinking in the classroom *is* better than less.

But is Mr. A. correct in assuming that students, when not being taught, are simply thoughtless, mindless? Perhaps what he means is that their thoughts are unfocused and he succeeds in focusing them. Or perhaps he believes their thoughts are focused elsewhere and he succeeds in focusing them on the topic at hand.

Mr. A. is rightly suspicious of lecturing as a means of getting students to think critically, although it has its merits as a means of getting them to think. However, he monopolizes the questioning process, instead of encouraging the students to think up the questions themselves. In doing so, he gets them thinking, but no thinking for themselves--this being, in part, what the difference between answering questions and asking them comes down to. And even if he were to get them to ask questions, this would be no great advance if they were to believe that only he could provide the answers or if that were *all* they could do.

Misconception #2. Students will think critically if teachers critically teach what they know.

When genuine teaching occurs, both teachers and learners are involved in thinking, just as buyers and sellers are together involved in commercial transactions. But it does not follow that reflective teachers will necessarily produce reflective learners, just as it does not follow that rapid teachers will produce rapid learners.

Consider the case of Ms. B. Ms. B. is justly proud of her reputation for knowing her subject and for demanding that her students acquire as much as possible of that knowledge for themselves before they depart form her course. Many students find her courses difficult: there seems to be so much material to cover, retain and master. Some students feel that their previous courses have not prepared them with the skills needed for dealing with these complex and specialized topics. With this opinion the teacher will likely concur, adding that it is up to previous teachers to do their job better, rather than that she herself should water down her course content by teaching skills.

Comment: There can be little doubt that Ms. B.'s knowledge of her subject is authoritative. Moreover she has carefully examined the assumptions generally made by her colleagues (as well as her own), and it would be difficult to deny that her grasp of her subject is the product of a great deal of critical thinking.

Now thinking in general is the conscious processing of experience--or at least so I take it to be. And I assume that critical thinking begins with reflections upon practical activity and eventuates in

judgement. All of this is what Ms. B. has done. She has processed the "raw, crude, macroscopic experience" (to use Dewey's terminology) of her professional life and converted it into the refined end-products called knowledge. In the process, *she* has been compelled to think critically. It does not follow, however, that the students who learn those end-products will be thereby empowered to think critically. For this to be possible, *they* must have access to at least some of the crude, raw, problematic materials with which she herself began, so that they can work their way through it as she did.

A further comment about Ms. B. pertains to her attitude that students who enter her classroom must be prepared with the skills necessary for mastering the contents she will provide, and that she cannot be expected to take time out rehearsing them in such skills. But this is not the only way in which skill deficiencies can be made up. For example, if she were willing to conceive of her subject-matter as problematic rather than as settled, as a starting point rather than as a terminus of inquiry, she might find that her students' cognitive proficiencies would improve concurrently with the progress of the inquiry.

While I have great respect for the importance of the teacher as a model of good thinking, I doubt there is much evidence to show that this alone is sufficient to bring about significant improvement in the way students think. There is a persistant conviction among those who educate teachers that if teachers think more critically, it will trickle down somehow to the students. I suspect that, short of drastic overhaul of texts and tests and classrrom methodologies, we may well see the phenomenon of teachers thinking more critically but students nowhere getting the benefit of it.

Misconception #3. Teaching about critical thinking is an effective way to teach for critical thinking.

Of all the faulty assumptions one might refer to in this matter, this is perhaps the most insidious and the most important, because it itself rests in turn upon the still deeper and deeper mistaken assumption about the role of values in education. I cannot examine these underlying assumptions here in any detail, but perhaps it will be sufficient to say that, in my opinion, *we will not be able to get students to engage in better thinking unless we teach them to employ criteria and standards by means of which they can assess their thinking for themselves.* I do not see this coming about through "teaching *about* critical thinking" as it is now understood and practiced.

For example, we can consider the case of Ms. C. Ms. C. is quite fascinated by the question of "how we think," and is eager to make her students equally fascinated with it. Consequently she is frequently to be found relating to students and others the latest theoretical findings with regard to the thinking process and its underlying conditions, or basing her teaching on these findings. She distinguishes among her

students according to their cognitive styles, or their right-brain, left-brain dominance, or their stages of moral development, or their sex, or their body types: there are many ways of setting students apart. Having categorized and characterized students in accordance with the empirical differences noted by and reported by experimenters, her next job is to address each individual student as appropriately as possible, on the assumption that such individual attention is needed in order to deal effectively with individual differences.

Comment: There can be no doubt that empirical research about teaching and learning can be useful to teachers, just as there can be no doubt that individual attention is often desirable because of the special characteristics of particular students. Nevertheless these differences should not be construed as an excuse for fragmenting the class into a mere collection of isolated individuals. The creation of a classroom community of inquiry should be pursued *in spite of* individual differences, rather than settle for a rag-tag aggregation of individuals *because of* such differences. We can hardly hope to build an equitable, pluralistic society if, at the first sign of diversity, we attempt to disband and segregate the classroom community.

Teaching students about critical thinking is about as unlikely to create a nation of critical thinkers as having students learn research results about bicycle riding is unlikely to create a nation of bicycle riders. (This is not to say that elementary school courses in Psychology or in the Psychology of Cognition, would be inappropriate in terms of the knowledge students aquire from them. It is simply to say that critical thinking involves participating in *practical* reasoning, and teaching *about* critical thinking has little to contribute in this regard.)

In short, knowing more is not equivalent to thinking better. Critical thinking, like education generally, is a normative intervention whose aim is not simply to bring children's thinking into line with everyone else's thinking, but to get them to be more reflective, more reasonable and more judicious. Paradoxical as it may seem, teaching the facts about a subject cultivates a distanced, theoretical attitude towards that subject rather than a practical one.

Misconception #4. Teaching for critical thinking involves drilling for thinking skills.

As one learns one's first language, in the midst of the life of the family, one is rarely drilled or rehearsed in grammar or usage. One finds oneself immersed in a series of situations, each of which has its unique quality, and in each of which there are utterances that have their unique meaning. Each context prescibes its meaning, and these meanings then accrue to the speech-acts and language utilized in those contexts. To divorce such acts from their contexts is to divorce them from their meaning, which is not salvaged by monotonous repetition. Now, where meaning is minimal (as for example in memorizing the multiplication table), drill may be justifiable, but where the meaning

component is significant, and this is, one would hope, the desired state of affairs, drill is otiose, because it involves a dissociation of the thinking process from the meanings that one might otherwise have to think about. In such cases, the intelligence produced by drills is likely to be an alienated intelligence.

Consider the arguments produced by Mr. D. He is an experienced teacher, quite aware of the powerful role that practice has in education. Very often, he reasons, one learns to do something by going out and doing it. This is the way we learn how to swim, dance and skate. Skills are matters of "knowing how," while contents are matters of "knowing that." Contents can be passed from one mind to the other by teaching, but skills have to be acquired by practice. Consequently, Mr. D. contends, since the quality of one's thinking is a matter of skill, of "knowing how" to think, and since skills emerge out of practice, what better approach can there be to teaching for improved thinking than to give students lots of drills in performing specific thinking operations? Besides, according to Mr. D., if previous teachers have failed to provide the students with the skills neccesary for coping with the contents of his course, then he has the responsibility for providing them himself.

Comment: Mr. D. is making a number of assumptions that are frequently made by educators. The first is that, if students are lacking in the skills needed to master the content of a course, one can simply implant them or infuse them into the curriculum. Secondly, he assumes that the best way of teaching skills is by drill. And third, he assumes that skills are *all* that is needed.

With regard to the first question, one might inquire what the evidence is that the infusion approach works. And if it does work, is it because of its own merits, or because it reinforces what has been acquired by the students in a separate course in critical thinking? (Before we dismiss the possibility of adding such courses to the curriculum, we had better consider any evidence that might be adduced to the effect that they can be of enormous value, if properly taught.

The response to the "building skills by thinking drills" approach is much the same. One can first ask if it works. And one can secondly ask how it compares with less artificial methods, such as logically disciplined dialogue in the classroom.

As for the third assumption, one may respond by pointing out that a good critical thinker is a good craftsman, and craftsmanship is never a mere aggregation of skills. A metalworker may be ever so skilled in drilling, filing, cutting, grinding, measuring and so on, but if he lacks such criteria as utility, servicability and beauty, or if he has such criteria but has low standards for satisfying them, he cannot be other than a poor craftsman, if a craftsman at all. So with critical thinking: it is essential that critical thinkers recognize, work with and are prepared to appeal to the criteria that are relevant to the matters under investigation. It is also essential that they have high standards of performance, so that they not

permit themselves to engage in thinking that is shoddy, illogical or uncritical. And it is essentail that they become adept at handling more than one skill at a time, for at any one moment, numerous skills may be clustered together, while at the next moment they may be reorganized into a contrapuntal arrangement.

Misconception #5. Teaching for logical thinking is equivalent to teaching for critical thinking.

If critical thinkers aim to avoid (among other things) illogicality, it is tempting to assume that critical thinking *is* logicality. If this were the case, it might follow that nothing more is needed than a good course in logic.

Ms. E., for example, has for a long time been fed up with the slovenly reasoning of her students. It is not enough, she argues, to teach them grammar and vocabulary, or arithmetic and geometry; they have to learn how to reason logically. She therefore obtains permission to teach a course in formal logic.

Comment: Ms. E. is probably correct in her suspicion that the failure of the schools to insist upon elementary logical competence among students (while demanding an arithmetical competence perhaps even beyond what is needed for a balanced approach) represents a serious flaw in the educational process. But while Ms. E. may be right that logical competence is necessary, it does not follow that, if added to the curriculum, it would be sufficient to set matters right.

For one thing, teaching logic in isolation in no way shows students how to *apply* that logic to the subject-matters of the various disciplines. Unless students are taught how to splice together or marry logical skills and course contents, they will generally be helpless to do so.

Our failure to integrate skills and contents in the schools reflects our taking the model of the university too seriously in this regard. (There are ample other respects in which we do not take it serioously enough.) Thus it is in the university that undergraduates are given, in each course, a paradigm of overspecialization. (The high schools eagerly ape the colleges on this point.) If I had my way, instead og giving undergraduates a course in logic or critical thinking and a course in biology or anthropology or philosophy, I would see to it that they got a course in Biological Reasoning, or Anthropological Reasoning, or Philosophical Reasoning, so that the logical skills and the course contents would be presented to the students as integrated with one another from the very start.

Misconception #6. Teaching for learning is just as good as teaching for critical thinking.

Some educators would apparently like to defuse the demand for critical thinking by maintaining that teaching for learning is just as

good, and probably better. This can only be settled by asking, "Good for what?" It depends on the goals of education. Are we trying to produce people who will grow up to be informed and knowledgeable citizens or people who will be reasonable and reflective citizens or both?

Ms. F.'s case is a case in point. Ms. F. is, by the standards prevailing in her district, an exceptionally good teacher. But she is troubled and dissatisfied nevertheless. She knows her subject and she teaches it the way she was taught to teach it. Why then, when her students are tested, do they not seem to know all that she expects them to know?

Comment: We may want students to grow up to be reasonable and reflective, but we test them on what they know--on what they have learned. There is a serious discrepancy here. Students and their parents expect that the education provided by schools will be relevant to and applicable to life and the world in which we live. We cannot be expected to develop good judgement if we cannot see the applicability of what we are taught to our daily practice and daily experience.

The result is general dissatisfaction--among parents, among teachers and among students, because the conception of education prevalent among those who make the tests is generally knowledge-based rather than judgement-based. And even when concessions are made by the test-makers in the form of "reflective items," such concessions are likely to be grudging and inadequate. It is not that tests in pure, abstract reasoning abilities are needed, but that we should be trying to find out if students *can make judgements based on what they know*, and not merely whether or not they know it.

There are, I suspect, a great many teachers in Ms. F.'s situation. They can't figure out what's wrong: some days they blame the students, some days they blame themselves. But until educators get their priorities straight--until, in other words, they agree upon a consistent and coherent set of criteria and standards applicable to the educational process--serious, well-intentioned teachers like the ones we have been considering here are going to continue to sense that something, somewhere is wrong with the system.

We have reached a point where we must figure out how we can upgrade the entire educational process, and not just one or another of its parts. One of the things this means is that students must be participatory in any such upgrading. We may have the best criteria in the world, but if they are perceived by students as only ours and not theirs too, they will feel cheated and manipulated. Students have to be shown how to internalize adequate standards if they are to live by them. If we want them to think for themselves, then we must see to it that they appropriate the values of the educational process itself, just as they are to live by the democratic process.

This is why we need to conceive of critical thinking education as education that aims to introduce criteria into practice when they are altogether absent, and to make them explicit when they are merely implicit. We need to conceive of critical thinking as thinking that is *reliant upon other criteria, self-correcting, sensitive to context and conducive to judgment.* These features can be operationalized in practice, as for example when we convert the classroom into a community of inquiry.

Why inquiry? Many reasons could be given for looking to inquiry as a major form of life in the world of the future. But I will here offer only one: the product of inquiry is meaning, and it is meaning for which we are all voracious, perhaps students most of all. An education that produces meaning will be satisfying for its own sake, and not merely for the sake of extrinsic benefits. Critical thinking is a superior way of processing experience by getting more meaning out of such experience and by putting more meaning back into it. It is a way of making education--to resort to a much overused but still useful word--relevant. But the failure of efforts to make education relevant during the past two decades stemmed from the peculiar notion that there merely had to be relevant content, without any effort to develop *relevant skills.* Perhaps now, with the upsurge in attention being given to critical thinking, we will begin to understand what has to be done.

Matthew Lipman is Professor of Philosophy and Director of the Institute for the Advancement of Philosophy for Children, Montclair State College.